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Amendment

(under PCT Article 11)

To: Commissioner of the Patent Office

1. International Application No. PCT/JP2004/003539

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4. Object of Amendment: Claims

5. Contents of Amendment

(1) "the photochromic compound (III)" at lines 4 and 5, page 42 of Claim 1 (corresponding to lines 4 and 6, page 50 of the English translation of Amendment Claims dated January 6, 2005) and at lines 25 and 26, page 42 of Claim 4 (corresponding to lines 4 and 6, page 50/1 of the English translation of Amendment Claims dated January 6, 2005) is amended to "the photochromic compound (IV)."

(2) "6. A polymerization curable composition

comprising: ····polymerizable monomers, respectively." at line 3, page 43 of claim 6 (corresponding to the end line, page 50 to line 13, page 51 of the English translation of PCT Description) is amended to

"6. (Amended) A polymerization curable composition for a photochromic lens substrate, the polymerization curable composition being: a polyfunctional polymerizable monomer represented by the above formula (1);  
(I) a bifunctional polymerizable monomer represented by the above formula (2);  
(II) other polymerizable monomer different from the above polymerizable monomers (I) and (II);  
(III) a photochromic compound; and  
(IV) a thermopolymerization initiator, wherein the amounts of the polyfunctional polymerizable monomer (I), the bifunctional polymerizable monomer (II) and the other polymerizable monomer (III) are 1 to 15 wt%, 10 to 80 wt% and 5 to 89 wt% based on the total of all the polymerizable monomers, respectively, the fading half-life period of the photochromic compound (IV) in the cured product is 30 times or less shorter than the fading half-life period of the photochromic compound (IV) in the polymerization curable composition, and the

substrate has a tensile strength of 20 Kgf or more."

- (3) "9. A polymerization curable composition comprising :

.....polymerizable monomers, respectively." at line 24, page 43 of Claim 9 (corresponding to line 30, page 51 to line 9, page 52 of the English tranlation of PCT Description) is amended to

"9. (Amended) A polymerization curable composition for a phtochromic lens substrate, the polymerization curable composition being:

(I) a polyfunctional polymerizable monomer represented by the above formula (1);

(II) a bifunctional polymerizable monomer represented by the above formula (2);

(III) optionally, other polymerizable monomer different from the above polymerizbale monomers (I) and (II);

(IV) a photochromic compound; and

(V) a photopolymerization initiator, wherein

the amounts of the polyfunctional polymerizable monomer (I), the bifunctional polymerizable monomer (II) and the other polymerizable monomer (III) are 1 to 60 wt%, 10 to 90 wt% and 0 to 89 wt% based on the total of all the polymerizable monomers, respectively, the fading half-life period of the photochromic compound (IV) in the cured product is 30 times

or less shorter than the fading half-life period of the photochromic compound (IV) in the polymerization curable composition, and the substrate has a tensile strength of 20 Kgf or more."

6. List of Attachment

Pages 42, 42/1, 43 and 43/1 of Claims (corresponding to pages 50, 50/1, 51, 52 and 52/1 of English translation of Claims)

the other polymerizable monomer (III) are 1 to 15 wt%, 10 to 80 wt% and 5 to 89 wt% based on the total of all the polymerizable monomers, respectively, the fading half-life period of the photochromic compound (IV) in the cured product is 30 times or less shorter than the fading half-life period of the photochromic compound (IV) in the polymerization curable composition, and the substrate has a tensile strength of 20 Kgf or more.

2. The lens substrate according to claim 1, wherein the bifunctional polymerizable monomer (II) is a combination of a first bifunctional polymerizable monomer of the above formula (2) in which  $(m + n)$  is 0 to 5 and a second bifunctional polymerizable monomer of the above formula (2) in which  $(m + n)$  is 6 to 30, and the molar amount of the second bifunctional polymerizable monomer is 3 times or less larger than that of the first bifunctional polymerizable monomer.

3. (Deleted)

4. (Amended) A photochromic lens substrate composed of a cured product of a polymerization curable composition comprising:

(I) a polyfunctional polymerizable monomer represented by the above formula (1);

(II) a bifunctional polymerizable monomer represented by the above formula (2);

(III) other polymerizable monomer different from the above polymerizable monomers (I) and (II);

(IV) a photochromic compound; and

(V) a photopolymerization initiator, wherein

the amounts of the polyfunctional polymerizable monomer (I), the bifunctional polymerizable monomer (II) and

the other polymerizable monomer (III) are 1 to 60 wt%, 10 to 90 wt% and 0 to 89 wt% based on the total of all the polymerizable monomers, respectively, the fading half-life period of the photochromic compound (IV) in the cured product is 30 times or less shorter than the fading half-life period of the photochromic compound (IV) in the polymerization curable composition, and the substrate has a tensile strength of 20 Kgf or more.

5. The lens substrate according to claim 4, wherein the polymerization curable composition further comprises at least one oligomer selected from the group consisting of bifunctional to hexafunctional polymerizable urethane oligomers and bifunctional to hexafunctional polyester oligomers.

6. (Amended) A polymerization curable composition for a photochromic lens substrate, the polymerization curable composition being:

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a polyfunctional polymerizable monomer represented by the above formula (1);

(I) a bifunctional polymerizable monomer represented by the above formula (2);

5 (II) other polymerizable monomer different from the above polymerizable monomers (I) and (II);

(III) a photochromic compound; and

(IV) a thermopolymerization initiator, wherein

the amounts of the polyfunctional polymerizable  
10 monomer (I), the bifunctional polymerizable monomer (II) and the other polymerizable monomer (III) are 1 to 15 wt%, 10 to 80 wt% and 5 to 89 wt% based on the total of all the polymerizable monomers, respectively, the fading half-life period of the photochromic compound (IV) in the cured product  
15 is 30 times or less shorter than the fading half-life period of the photochromic compound (IV) in the polymerization curable composition, and the substrate has a tensile strength of 20 Kgf or more.

20 7. The composition according to claim 6, wherein the amounts of the polyfunctional polymerizable monomer (I), the bifunctional polymerizable monomer (II) and the other polymerizable monomer (III) are 3 to 10 wt%, 20 to 60 wt% and 30 to 77 wt%, respectively.

25 8. The composition according to claim 6, wherein the bifunctional polymerizable monomer (II) is a combination of a first bifunctional polymerizable monomer of the above formula (2) in which  $(m + n)$  is 0 to 5 and a second bifunctional  
30 polymerizable monomer of the above formula (2) in which  $(m + n)$  is 6 to 30, and the molar amount of the second bifunctional polymerizable monomer is 3 times or less larger than that of the first bifunctional polymerizable monomer.

9. (Amended) A polymerization curable composition for a photochromic lens substrate, the polymerization curable composition being:

- (I) a polyfunctional polymerizable monomer represented by the above formula (1);
  - (II) a bifunctional polymerizable monomer represented by the above formula (2);
  - (III) optionally, other polymerizable monomer different from the above polymerizable monomers (I) and (II);
  - (IV) a photochromic compound; and
  - (V) a photopolymerization initiator, wherein
- the amounts of the polyfunctional polymerizable monomer (I), the bifunctional polymerizable monomer (II) and the other polymerizable monomer (III) are 1 to 60 wt%, 10 to 90 wt% and 0 to 89 wt% based on the total of all the polymerizable monomers, respectively, the fading half-life period of the photochromic compound (IV) in the cured product is 30 times or less shorter than the fading half-life period of the photochromic compound (IV) in the polymerization curable composition, and the substrate has a tensile strength of 20 Kgf or more.

10. The composition according to claim 9, wherein the amounts of the polyfunctional polymerizable monomer (I), the bifunctional polymerizable monomer (II) and the other polymerizable monomer (III) are 10 to 60 wt%, 20 to 90 wt% and 0 to 70 wt%, respectively.

11. The composition according to claim 9, wherein the bifunctional polymerizable monomer (II) is a combination of a first bifunctional polymerizable monomer of the above formula (2) in which  $(m + n)$  is 0 to 5 and a second bifunctional polymerizable monomer of the above formula (2) in which  $(m$



+ n) is 6 to 30, and the molar amount of the second bifunctional polymerizable monomer is 3 times or less larger than that of the first bifunctional polymerizable monomer.

5 12. A photochromic lens which comprises the photochromic lens substrate of claim 1, a hard coat layer and a buffer layer, said buffer layer being interposed between the hard coat layer and the substrate and having lower pencil hardness than the hard coat layer, for bonding the substrate to the  
10 hard coat layer.

13. The lens substrate according to claim 4, wherein the bifunctional polymerizable monomer (II) is a combination of a first bifunctional polymerizable monomer of the above  
15 formula (2) in which (m + n) is 0 to 5 and a second bifunctional polymerizable monomer of the above formula (2) in which (m + n) is 6 to 30, and the molar amount of the second bifunctional polymerizable monomer is 3 times or less larger than that of the first bifunctional polymerizable monomer.

20 14. A photochromic lens comprising the photochromic lens substrate of claim 4, a hard coat layer and a buffer layer, interposed between the hard coat layer and the substrate and having lower pencil hardness than the hard coat layer, for  
25 bonding the substrate to the hard coat layer.

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